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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Masakazu Okuda

Serial No.: 09/807,823 **Group Art Unit:** 2853

Filed: April 19, 2001 **Examiner:** Nguyen, Lam S.

For: METHOD FOR DRIVING INK JET RECORDING HEAD

Honorable Commissioner of Patents
Washington, D.C. 20231

AMENDMENT UNDER 37 C.F.R. §1.111

Sir:

In response to the Office Action dated November 13, 2002, please amend the above-identified application as follows:

IN THE CLAIMS:

Please amend claims 18-22 as follows:

18. (Amended) A method for driving an ink jet recording head, comprising:

applying a driving voltage to an electro-mechanical converter to deform the electro-mechanical converter to thereby change a pressure in the pressure generating chamber filled with ink, thus ejecting ink droplets through a nozzle in communication with the pressure generating chamber, wherein said applying said driving voltage comprises:

at least a first voltage changing process for applying a voltage in a direction that increases a volume of said pressure generating chamber;

a second voltage changing process for then applying a voltage in a direction that reduces the volume of said pressure generating chamber; and

a third voltage changing process for applying a voltage in a direction that increases the volume of said pressure generating chamber again;

setting voltage changing times t_2 and t_3 during the second and third voltage changing processes so as to have such lengths as shown below, relative to a resonance frequency T_c of a pressure wave generated in the pressure generating chamber:

$0 < t_2 < T_c/2$

$0 < t_3 < T_c/2$; and

providing said nozzle with an about 20 to about 30 μm opening diameter to eject said ink droplets in a size of about 5 to about 25 μm size.

19. (Amended) A method for driving an ink jet recording head, comprising:

applying a driving voltage to an electro-mechanical converter to deform the electro-mechanical converter to thereby change a pressure in the pressure generating chamber filled with ink, thus ejecting ink droplets through a nozzle in communication with the pressure generating chamber, wherein said applying of said driving voltage comprises:

at least a first voltage changing process for applying a voltage in a direction that increases a volume of said pressure generating chamber;

a second voltage changing process for then applying a voltage in a direction that reduces the volume of said pressure generating chamber;